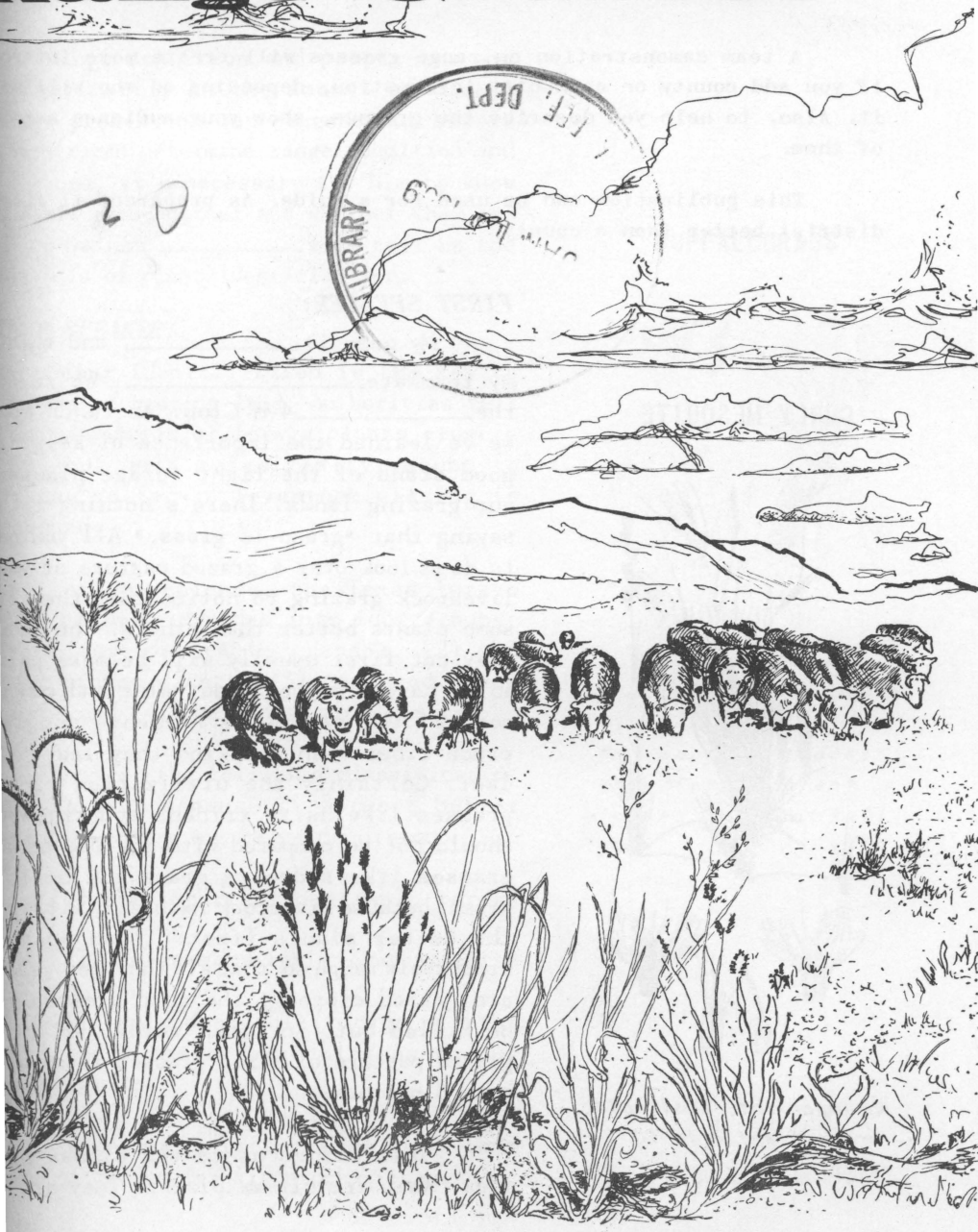
MP-164

# Do you know your Range Grasses?





TEXAS AGRICULTURAL EXTENSION SERVICE
L. F. HUTCHISON, DIRECTOR, COLLEGE STATION, TEXAS

# DO YOU KNOW YOUR RANGE GRASSES?

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*Extension Range Specialists*

*The Texas A. & M. College System*

A team demonstration on range grasses will create more interest if you add county or community information, depending on who will hear it. Also, to help you describe the grasses, show your audience samples of them.

This publication can be used for a guide. As prepared, it fits a district better than a county.

## CURLY MESQUITE

*An important, desirable forage plant 4 to 10 inches tall*

### *FIRST SPEAKER:*

My name is_____, and this is my teammate,_____. We're from the_____4-H Club. As ranch boys, we've learned the importance of keeping a good stand of the right forage plants on our grazing lands. There's nothing to the saying that "grass is grass." All you need to do is look over a grazed pasture or watch livestock grazing to notice that they like some plants better than others. The plants they eat first usually will be more palatable, have a higher food value and contain more of the essential elements and less crude fiber than the kind they leave till last. Certainly the utilization of poor grasses like hairy tridens and threeawns should not be compared with the use of good grasses like sideoats grama and buffalograss, because livestock naturally will graze the better plants first. If an operator stocks his range so that all the poor grasses are grazed closely, the good grasses will be killed out. In other words, an evenly grazed pasture of mixed grasses is an overgrazed pasture.

This brings us to the climax grass idea. What are climax plants? They are the

highest type of vegetation which will grow on the area under given climatic and soil conditions. In the tall-grass area, it's the bluestem grasses; whereas, in the short-grass region, it's buffalo and blue grama. These key grasses are the most desirable ones.

Range condition and proper use are based primarily on the amount of climax grasses present on our ranges. But before a rancher can determine range condition and proper use, it's necessary for him to know one plant from another and whether they are good or bad._____will tell us the essentials of plant identification.

*SECOND SPEAKER:*

Plant identification is the key to sound use of grazing land. Authorities tell us that hundreds of forage plants grow in Texas, but only a few really amount to anything as far as livestock grazing is concerned.

For convenience, the Texas forage plants could be divided into four groups: (1) the most desirable grasses, (2) the better browse plants, (3) the good weeds or forbs and (4) the undesirable plants.

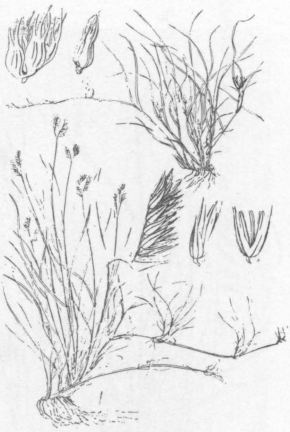
However, the following classification often is made because it forms a better basis for evaluating range condition:

(1) The important desirable forage plants
(2) The less desirable forage plants, and
(3) The undesirable forage plants.

So we'll use these three classes in our demonstration.

Since grass is the most important source of forage for livestock on the range,

**BUFFALOGRASS**



*An important, desirable forage plant 4 inches to 1 foot tall*

we have selected some of the most important native grasses in our county for this demonstration. We'll explain:

(1) How to identify these grasses
(2) Their forage value and abundance, and
(3) Their growth habits, which largely determine proper management.

First we'll discuss some of the most desirable grasses growing in our area.

*FIRST SPEAKER.*

This is curly mesquite (show sample), and this is buffalograss (show sample), which are both sod-forming grasses. They are common in our county and often are mistaken for each other. Both are short, runner-type grasses with curly leaves, have the same growing season and habits and form a sod like Bermudagrass. They reproduce from runners and seed. These runners take root at the joints.

It's easier to identify these two grasses by the seed heads, either when they are in bloom or before they shed the seed. Blooming may occur in both grasses throughout the growing season if there is a good supply of moisture; but usually these grasses produce two seed crops a year, one in the spring and another in late summer or fall.

Curly mesquite has a seed head attached directly to and on top of the flower stalks, with these stalks extending well above the leaves. The spike appears to be chaffy due to the broad papery glumes. Curly mesquite belongs to the same tribe as tobosagrass, and the seed heads are similar.

On the other hand, buffalograss has two different plants, one male and the other female, which are identical except for the reproductive parts. The male plant has a flag-shaped flower at the top of the flower

**SIDEOATS GRAMA**

*An important, desirable forage plant 1 to 3½ feet tall*

stalk, similar to the grama grasses. The female plant bears seed in clusters down among the leaves, and each individual seed resembles a bur. Both male and female plants may be found growing together or in separate spots near each other.

Other methods of identification may be used if these two grasses are not in flower. Curly mesquite has fine hair at the joints, long internodes and runners that are rough to the touch. On buffalograss the joints have no hair, the internodes are shorter and the runners are slick to the touch (point out). During the growing season, curly mesquite is light green while buffalo is a pea-green color.

Both of these grasses are of high forage value and grow abundantly over West-central Texas and in the Great Plains. They are very palatable and have a high food value for all classes of livestock in both the green and cured stages. Most livestock like buffalo better than curly mesquite. They often will graze around the curly mesquite to eat the buffalo first.

Both of these grasses usually grow in the heavier or tighter soils in flats and on mesas, but may be found on gentle to moderate slopes and occasionally on rocky slopes. These grasses begin to grow early in the spring and continue until late fall.

Both can take close grazing and are able to pull through long periods of drouth. However, to maintain a good turf and range condition, leave a good scattering of litter on the land. Curly mesquite and buffalograss should seldom be grazed closer than 1½ inches above the ground. _____ will now tell you about sideoats grama grass.

## LITTLE BLUESTEM

*An important, desirable forage plant 2 to 4 feet tall*

*SECOND SPEAKER:*

Sideoats grama (show sample) is the tallest of the grama grasses, and in the flowering stage it can be easily spotted from other grasses in this genus. It has a long, slender, oat-like seed head. When ripe, all the seed are on one side of the seed stalk.

When sideoats grama is not in flower, check for underground runners to help identify it, for this grass grows mainly from rootstocks like Johnsongrass. Also, its leaves are wide and flat and have long white hairs arising from leaf-colored glands on the outer edges.

Sideoats grama is distributed widely in the grazing states and grows in patches on dry slopes, ridges and rocky hillsides. Its forage value is good to excellent, but it is most palatable during the spring and summer while it's green.

This grass won't stand heavy grazing, and on over-used ranges it may be found growing only under the protection of shrub growth. Sideoats grama often is used as an indicator of proper range use. On a properly grazed range, sideoats grama should not be grazed closer than 4 inches, and a scattering of flower stalks should remain.

_____now will tell you how to identify little bluestem, the fourth desirable grass for discussion.

*FIRST SPEAKER:*

Little bluestem (show sample) is a bunch grass like sideoats grama, but it grows taller and has bluish leaves and flat stems during the growing season. When mature, the leaves and stems take on a brownish, leathery color. Normally, little bluestem

**TEXAS WINTERGRASS**

*A less desirable forage plant 1 to 2 feet tall, sometimes taller.*

orns seed with feathery seed heads in eptember and October. The stalks are pithy ike corn, while most other grasses have ollow stems.

Little bluestem is distributed widely nd is a climax grass in the northern Great lains and tall-grass regions. It grows on ry, sandy and sometimes gravelly soils, and s more common at low altitudes. Its forage alue is high, especially when the grass is oung and tender. It loses some of its alatability in late summer when it is in he flower stage, but it becomes fairly alatable to cattle and horses in the fall.

Little bluestem won't stand heavy razing and is replaced by the gramas, es-ecially on areas which are subjected to eavy spring grazing. Little bluestem should e grazed in rotation and probably not lower han 6 to 8 inches to maintain its produc-ivity on a range.

So far, we've talked about two sod-orming grasses, curly mesquite and buffalo, nd two bunch grasses, sideoats grama and ittle bluestem. All four of these, as well s blue grama and black grama, are the most esirable grasses growing in our county district).

_____now will tell you about reen sprangletop, another of the desirable erennial bunch grasses found in this area.

*ECOND SPEAKER:*

Green sprangletop (show sample) is a arm season climax grass which can be found rowing from spring into fall. This grass rows from 2 to 4 feet tall and has wiry, rect stems.

The distinguishing characteristic of reen sprangletop is its seed head of many

**GREEN SPRANGLETOP**

*A desirable forage plant 1 to 3 feet tall*

spreading seed branches (show seed head). The entire head may be 6 to 12 inches long with 5 to 12 spikes. At maturity the seed head is spreading widely, drooping and has a pale color. The spikelets are overlapping on short pedicels and have 4 to 8 flowers.

Livestock take readily to this grass and obtain a considerable amount of palatable forage from it. Rabbits also like this grass and will kill out seedlings.

The habitat of this grass is rocky hills and banks in most of the State with the exception of the extreme Panhandle, Pineywoods and the Eastern Gulf Coast.

## PLAINS BRISTLEGRASS

*A desirable forage plant 1 to 3 feet tall*

_____will continue our discussion of desirable grasses by telling about plains bristlegrass.

***FIRST SPEAKER:***

Plains bristlegrass (show sample) also is a climax, warm season, perennial grass. Livestock relish plains bristlegrass and if an area is overgrazed the only place it can be found is under the protection of brush or pricklypear. Ordinarily it grows on open dry ground and in dry woods.

This grass is densely tufted (show bunch type growth) and has light-green tender leaves. It grows from 1 to 3 feet tall. The culms are flattened and may branch at the base and lower joints. The blades may be folded and the seed head (show seed head) is slim, bristly and narrowed at the top.

Plains bristlegrass is one of our better grasses and is heat and drouth resistant. It readily reseeds itself and spreads on rangelands when given the chance.

_____ now will discuss another of our desirable grasses.

*SECOND SPEAKER:*

Silver bluestem or silver beardgrass (show sample) is another of our desirable grasses which is very important in this area. It is closely related to little bluestem but does not furnish the same amount of nutritious, palatable forage. It is adapted farther west than little bluestem and is a very important forage grass in these western areas and may be classed as a climax grass.

Silver bluestem is a warm season, perennial bunch grass. This plant grows from an inclined base to 1½ to 3½ feet. The culms are bent and leafy while the nodes are smooth and white. It does not have the robust growth habit and does not have the ring of white hairs at the nodes like cane bluestem.

The distinguishing characteristic of this grass is its fuzzy white terminal seed head which has short awned spikelets (point out seed head on sample).

Silver bluestem is found in prairie areas and on rocky slopes, especially limestone areas of Texas west of the Piney-woods. Its abundance increases in protected areas and it is a good plant to use in reseeding old fields.

_____ will tell us about some of the less desirable grasses.

*FIRST SPEAKER:*

This is Texas wintergrass (show sample). Notice that attached to the seed is a long single beard or awn which is twisted and bent. The underside of the leaves are hairy and whitish.

**TOBOSAGRASS**

*A less desirable forage plant 1 to 2 feet tall*

The growing season of this grass makes it important in the range country. Normally, it starts growth in October and will continue until about May; therefore, it is green when most other grasses are dormant. Texas wintergrass produces a lot of good winter forage which is highly palatable to livestock. But the troublesome awns and bearded seed cause considerable damage to sheep; for this reason it is placed in the less desirable class. It grows most commonly in mesquite flats and along creeks on the better soils in West-central Texas and becomes more abundant under protection.

**SILVER BLUESTEM**

*A desirable forage plant 1½ to 3½ feet tall*

_____now will discuss hairy grama, another of the less desirable grasses of this area but also one which is important on our rangelands.

***SECOND SPEAKER:***

Hairy grama (show sample) is a widely distributed and adapted grama grass found in all areas of the State west of the Piney-woods. It does not furnish the same amount of palatable forage as blue and sideoats grama, although it cures out well for winter grazing. This grass is drouth enduring but must be treated like the more desirable grama grasses in that it must be grazed moderately to maintain a stand. All classes of livestock graze hairy grama readily.

Hairy grama is a warm season, shallow-rooted perennial which can be recognized by the rooster-comb-like seed head (show seed head). The seed head of hairy grama can be distinguished from blue grama since there is a spike-like spur (show spike-like spur on sample) on the outer end and it does not have the distinctive curl to the seed head. This plant grows from ½ to 2½ feet tall on sandy and rocky sites._____

will continue our discussion of less desirable grasses by telling you about tobosagrass.

*FIRST SPEAKER:*

This is tobosagrass (show sample). It is closely kin to curly mesquite and resembles it as far as the seed head is concerned. However, tobosagrass has rough, scaly underground runners or rhizomes and grows much taller than curly mesquite. Upon maturity or during dry seasons, tobosagrass leaves and stems look gray and ashy. Tobosagrass grows most abundantly in the Southwest on compact soils in open flats, swales and depressions. In such areas, it may form a pure stand of coarse sod grass. On dry sites, tobosagrass grows in scattered stands in large tufts, but it prefers the areas subject to overflow.

Tobosagrass is good in palatability when it is green and succulent, especially for cattle and horses. Normally, tobosagrass grows best during the summer rainy season and should be grazed during that period. It is one of the few grasses which will stand heavy grazing during the growing season and maintain itself. In the fall and winter, tobosagrass has little forage value due to its coarse and tough nature at this stage.

Tobosa range, adjoining black grama range, gives a good combination. The tobosagrass can be grazed during the growing season, which will permit deferred grazing on the black grama. The black grama is a good grass for winter grazing.

*SECOND SPEAKER:*

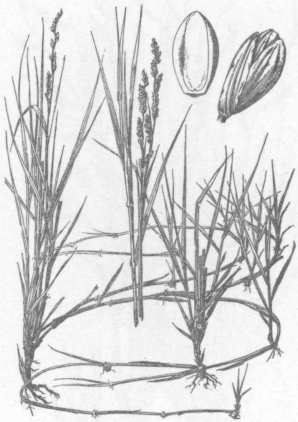
Another less desirable grass is vine mesquite (show sample). It produces a lot of palatable forage under favorable moisture conditions.

**HAIRY GRAMA**

*A less desirable forage plant $\frac{1}{2}$ to $2\frac{1}{2}$ feet tall*

The most noticeable thing about this grass is the long creeping stems or stolons which sometimes grow up to 10 feet long. These runners have green leaves at the "woolly," swollen joints. The grass grows primarily by taking root at the joints, but it also has short underground knotty rootstocks. These characteristics make it a good soil erosion control plant. Vine mesquite usually grows 1 to 2 feet tall, but the flowering stalks sometimes grow taller. The seed are brown, somewhat flat and rounded. The easiest way to identify vine mesquite anytime is by the swollen, wooly joints.

VINE MESQUITE



*A less desirable forage plant 1 to 2 feet tall*

Vine mesquite has good forage value in the spring and summer when it's green, but it becomes coarse and wiry later in the season. Livestock will eat most of the green leaves on this grass and leave the wiry stems.

Vine mesquite grows in the West-central part of the United States and is quite common in Texas on sandy or gravelly soil. It prefers moist areas such as creek banks, arroyos and ditches. It should be grazed following rainy weather when the grass is green and tender.

The rapid-growing system of mesquite offers some promise for re-vegetating eroded areas.

_____ will show you some of the undesirable grasses growing in our locality.

*FIRST SPEAKER:*

This is threeawn grass (show sample). Several kinds of threeawn grass grow in our county, and 24 different species are found in Texas. They are known more commonly as "needle grasses," but they have three awns on the seed.

Two perennial threeawn grasses are abundant in our locality. This is wright threeawn, and this is purple threeawn (show samples). Wright threeawn usually forms a large dense tuft, stands straighter and taller than purple threeawn. The awns on wright are shorter - about 1 inch long, while those on purple threeawn are about 2 inches long. Also, the purplish cast of purple threeawn in flower is quite distinctive.

Threeawn grasses usually produce green forage earlier in the spring than curly mesquite and buffalo. As a group, the perennial threeawns rate from poor to fair in forage value, having the most value in the spring and early summer when they are green. After maturity they become coarse and wiry, and grazing animals avoid the troublesome awns. They are bunch grasses which should be grazed early to get full benefit from them.

Threeawns often make up the bulk of the forage remaining on moderate to heavily grazed ranges because livestock do not like them as well as they do other grasses. Threeawn grasses grow on dry sandy soils, eroded areas, formerly cultivated fields and overgrazed ranges. In the semi-desert areas they make up a large percentage of the grass cover. Good range management should provide for replacing the threeawns with better grasses.

**WRIGHT THREEAWN**

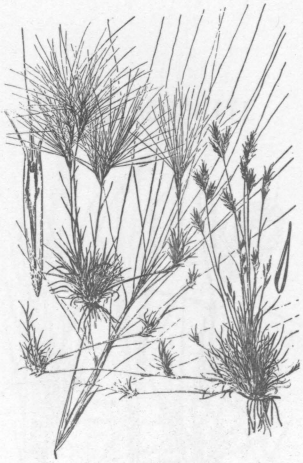
*An undesirable forage plant 1 to 2½ feet tall*

***SECOND SPEAKER:***

This is burrograss (show sample), another undesirable kind. It is a low-growing perennial which often produces both surface runners and underground runners. Burrograss is dioecious - that is, the male and female parts grow on different plants. This is the head of a male plant (point out). It resembles the head of fescue grasses. This is the seed head of a female plant and it looks

almost like the threeawn grasses. On western ranges these female plants vary from a pale green to a reddish purple, as the plants reach maturity. Upon maturity, the seed heads break away and are blown by the wind like "tumbleweeds." The male plants give the landscape a whitish cast upon maturity, which you can easily see during the fall.

## BURROGRASS



*An undesirable forage plant 6 to 12 inches tall*

Burrograss grows in patches or colonies on adobe clay soils in the Southwest, often in combination with tobosagrass. It grows well on overstocked ranges and sterile soil where it may help to prevent erosion. Burrograss is valuable as a forage plant only in early summer when it is young and green.

It does not produce much leafage, does not cure well, and on the whole could not be classed higher than "poor." For best use, burrograss should be grazed early in the growing season.

*FIRST SPEAKER:*

This is hairy tridens (show sample). It is a low-growing perennial grass which produces dense tufts. Hairy tridens rarely gets over 10 inches tall. Most of the leaves grow at the base. The club-shaped, fluffy seed head grows at the top of the seed stalk. The leaves are a whitish-green color with a white margin and a hairy appearance.

Hairy tridens grows in a wide variety of soils all over Texas except in the East Texas timber area. It often follows overgrazing on rocky areas in the Edwards Plateau and may be the only vegetation on eroded land. It often indicates that a range has been heavily used.

Hairy tridens does not produce much forage and is poor in nutritive value.

*SECOND SPEAKER:*

This concludes our demonstration. The identification, characteristics, forage value and growth habits of the various grasses we have told you about generally are true. However, changes in climate, soil conditions and management will influence the growth habits and forage value considerably.

We have discussed the grazing value of these grasses in terms of our local situation in the Central Edwards Plateau. As you move east, sideoats grama may be considered a less desirable grass; whereas, in far West Texas, tobosagrass might be considered the climax plant (highest desirable type) on flats and depressions.

Remember that plant identification is the key to sound use of grazing lands. When you know the desirable and undesirable plants, it is easy to tell whether they are in the increase or decrease and whether your range is getting better or worse.

Are there any questions or comments you'd like to make? (Pause and answer questions.) It's been a pleasure to talk with you.

**HAIRY TRIDENS**

*An undesirable forage plant 4 to 12 inches tall*

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